

Suspect/Counterfeit Bolts Found Installed in TD Forklift Trucks

TD-08-032

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Description

On 03-Sep-2008, Ted Beale (QC Supervisor, Quality & Materials Department) performed a visual inspection of an “older” forklift truck, looking for suspect/counterfeit bolts. The training recently given at Fermilab indicated that older trucks have a reasonable likelihood of containing S/C bolts. His inspection showed that several of the installed bolts were indeed on the DOE S/CI headmark list.

The truck was an Allis-Chalmers, with Fermilab property tag 50608:

<http://www-bss2.fnal.gov/propertyquery/runquery.asp?tagnumin=50608>

Since some of the bolts were in load-bearing positions, so the truck was taken out of service by tagging the key as such.

Results of additional inspections

We received a listing of all the TD forklift trucks from Vehicle Maintenance, and proceeded to perform a visual inspection of all trucks (total of 18). In all, 7 trucks were found to have S/C bolts installed, and all had at least one in a load-bearing position.

FNAL TAG	CAPACITY	MFG	MODEL	S/CI Found
2464	1500	CROWN	WT-130	No
6035	1500	BIG JOE	1056	No
19348	1000	ECONOMY DIE LIFT	CW54-A	No
30279	6000	ALLIS CHALMERS	706C	YES
31562	3000	ALLIS CHALMERS	ACE-30A	YES
38773	3000	RAYMOND	20-R30TT	YES
43352	5000	ALLIS CHALMERS	P60XPS	YES
50608	4000	ALLIS CHALMERS	P50XL	YES
50962	6000	ALLIS CHALMERS	P-60-X	YES
67521	2000	ALLIS CHALMERS	ACWS/I20	No
84281	3000	RAYMOND	20IRA30TT	No
85595	2175	CLARK	ESM25	No
85861	7000	HYSTER	H70XL	No
86375	4175	CLARK	CGP25	No
86863	8000	NORTHWESTERN MOTOR	100FLP-10K	No
88289	4000	Caterpillar	NPP40	No
98125	6000	UNITED	SM600	No
100798	6925	CLARK	C500-YS580	YES

Table 1 – Results of visual inspections (tags without links are not in the asset database)

The bolts found are a combination of ones which are on the DOE Headmark list, and ones which are grade 5 or higher and have no manufacturer’s headmark.

We do not know how or when the S/C bolts were installed on these trucks. They could be original, or they could have been installed during some previous maintenance work. We do believe that there was no intent to defraud, and so by definition the bolts are not counterfeit. So officially they are all “suspect”.

Repairs

We issued work tickets with Vehicle Maintenance, and all trucks which had suspect bolts found were repaired. The work entailed replacing ALL suspect bolts, even those which were in non-safety critical locations (e.g. holding on a light). The reasons for replacing the non-safety critical ones was primarily so that this issue would not resurface at any point in the future; in other words we wanted to fix the problem only once, and spend no additional time later wondering why we did what we did. It is worth noting that some of the non-safety critical suspect bolts were replaced by TD Technicians; this occurred because the maintenance contractor replaced only the safety-critical ones on the first truck repaired – the “official” decision to replace all bolts had not been made at that point in time.

In addition to replacing the bolts we found, the maintenance contractor also removed the front wheels, looked for additional suspect bolts, and replaced any that were found. He was able to do this because he had been given a copy of the DOE S/CI Headmark list. In at least one truck, he did replace additional bolts.

Reinspection

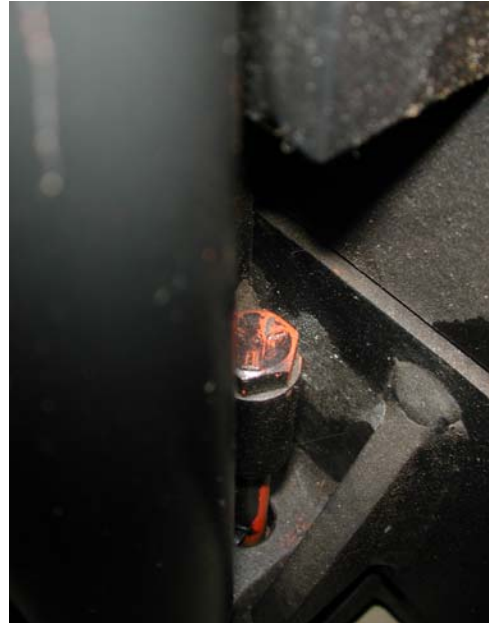
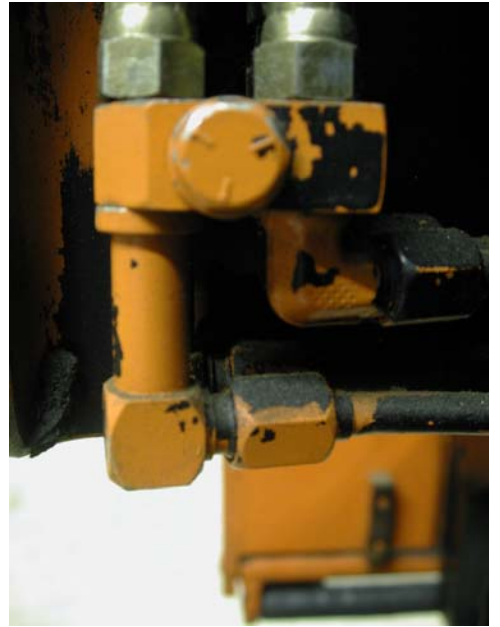
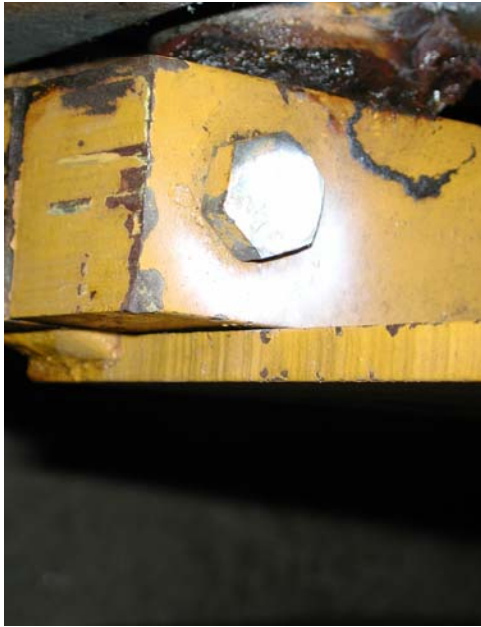
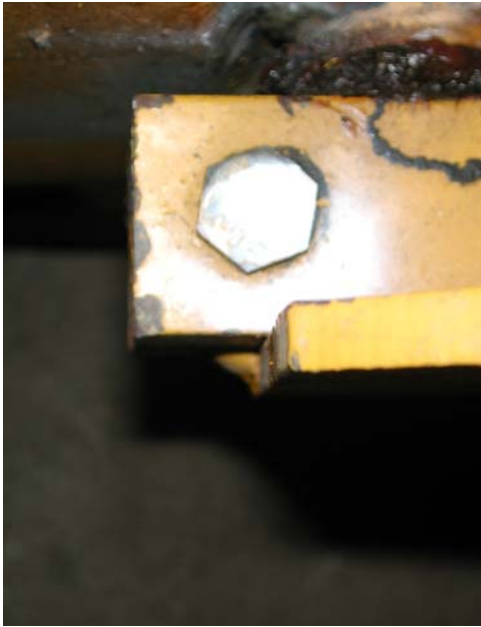
In order to ensure that all (visible) suspect bolts were replaced, all trucks which were worked on were reinspected. In five of the trucks, S/CI bolts were found, and so we asked vehicle maintenance to perform another round of maintenance, making sure that we were explicate in describing we need all S/CI bolts replaced, regardless of location. Subsequent conversations resulted in us understanding the communication disconnect: conflicting requests were being made of the maintenance people. TD had requested that all bolts be replaced, and other organizations had requested that only load-bearing bolts be replaced. After additional conversations TD accepted the approach of replacing only load-bearing. It is worth noting that the S/CI bolts which remain installed are not tagged or otherwise identified, and so we can expect to revisit this issue in the future.

The bolts

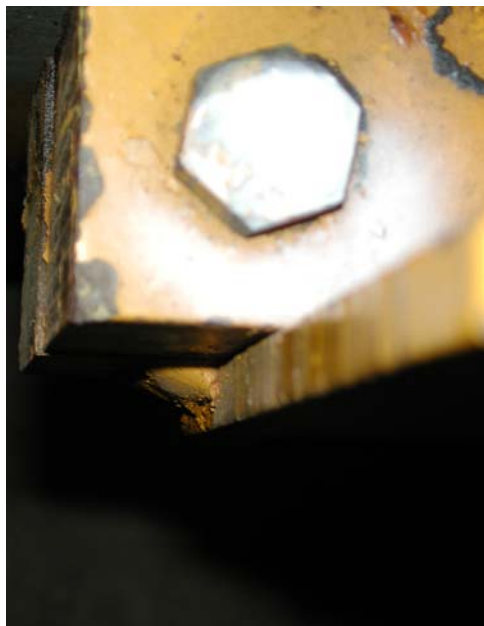
The current plan is to hold onto the bolts for a short period of time (less than a year), and then get rid of them in a manner that there is no way they can be reused.

Pictures of many of the bolts are below.

Forklift # 30279



Forklift # 30279



Forklift # 43352



Forklift # 50608



Forklift # 50962



Forklift # 100798

